

2013 Field Operations Report

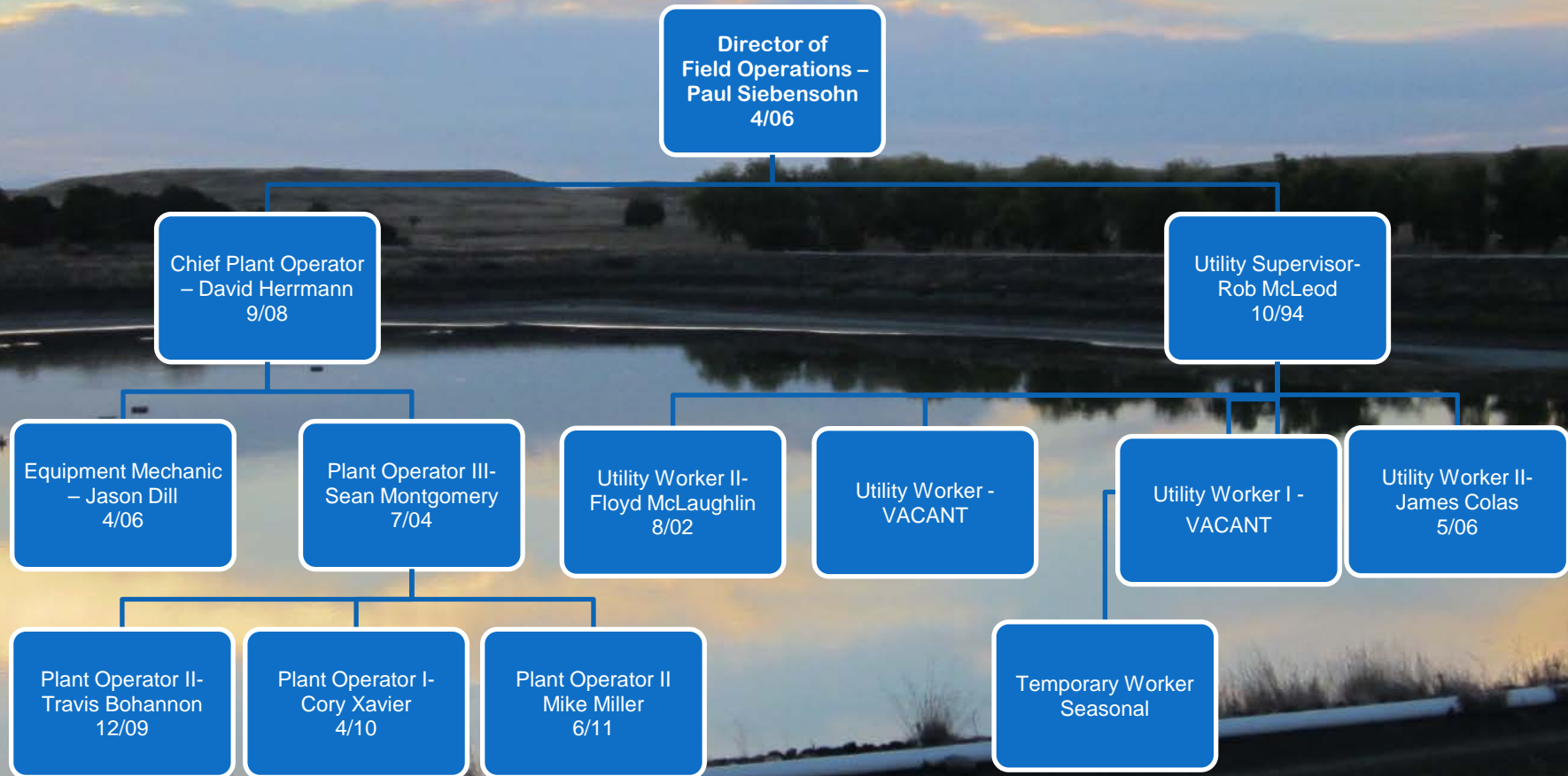
Liquid Assets Review: From Source to Course



Mission Statement

- **The mission of Rancho Murieta Community Services District is to take a leadership role in responding to the needs of the residents. The District will deliver superior community services, efficiently and professionally, at a reasonable cost to sustain the enhanced quality of life the community desires.**

Field Operations Staff Organization



What We Do..

Operate and maintain existing infrastructure for:

- **Raw Water Supply**
- **Drinking Water Treatment, Storage and Distribution**
- **Sewer collection, Sewage Treatment, Wastewater Reclamation**
- **Stormwater Management and Drainage**
- **Respond to customer inquiries relative to all our services.**

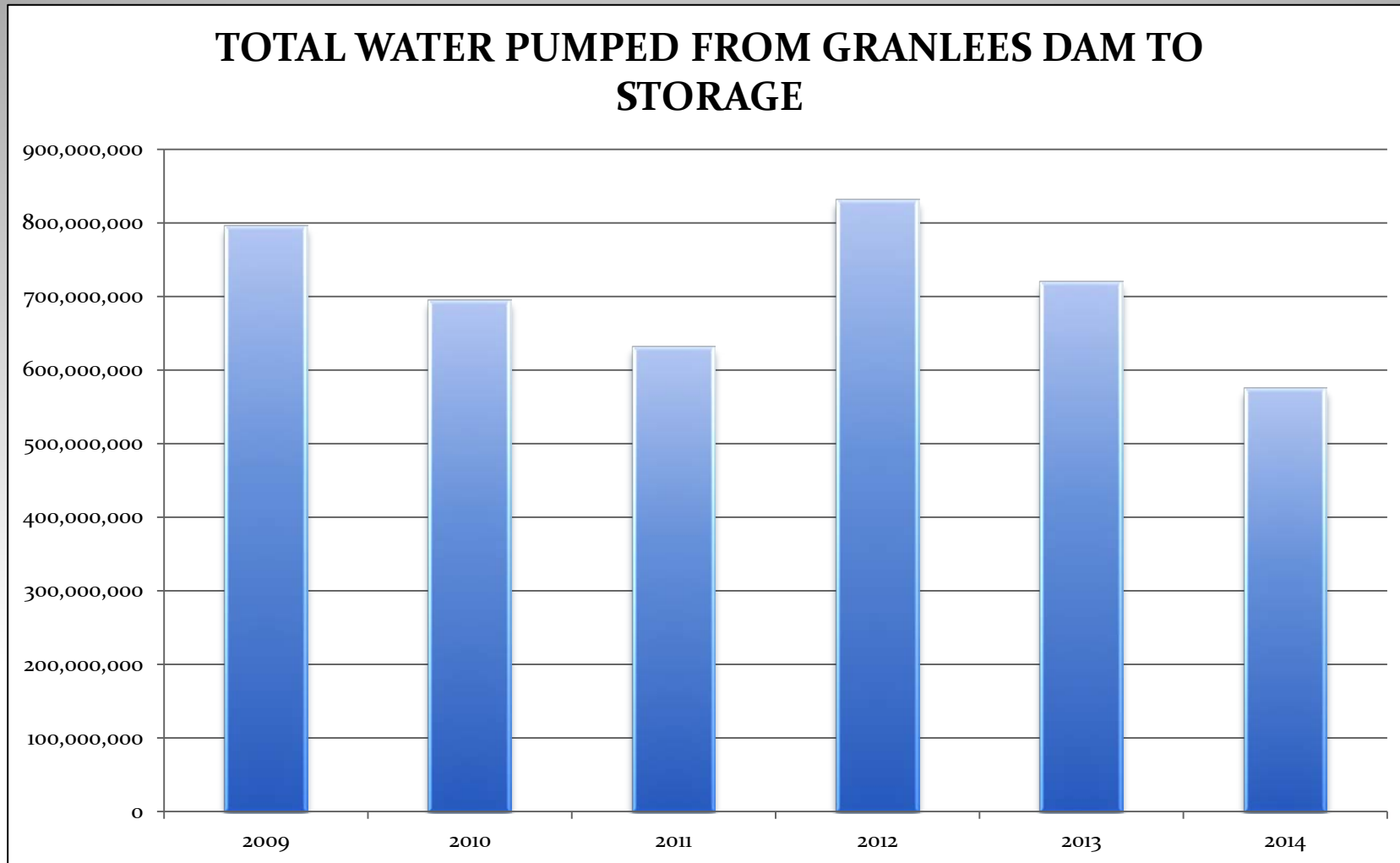
Source

Granlees Pumping & Diversion Station

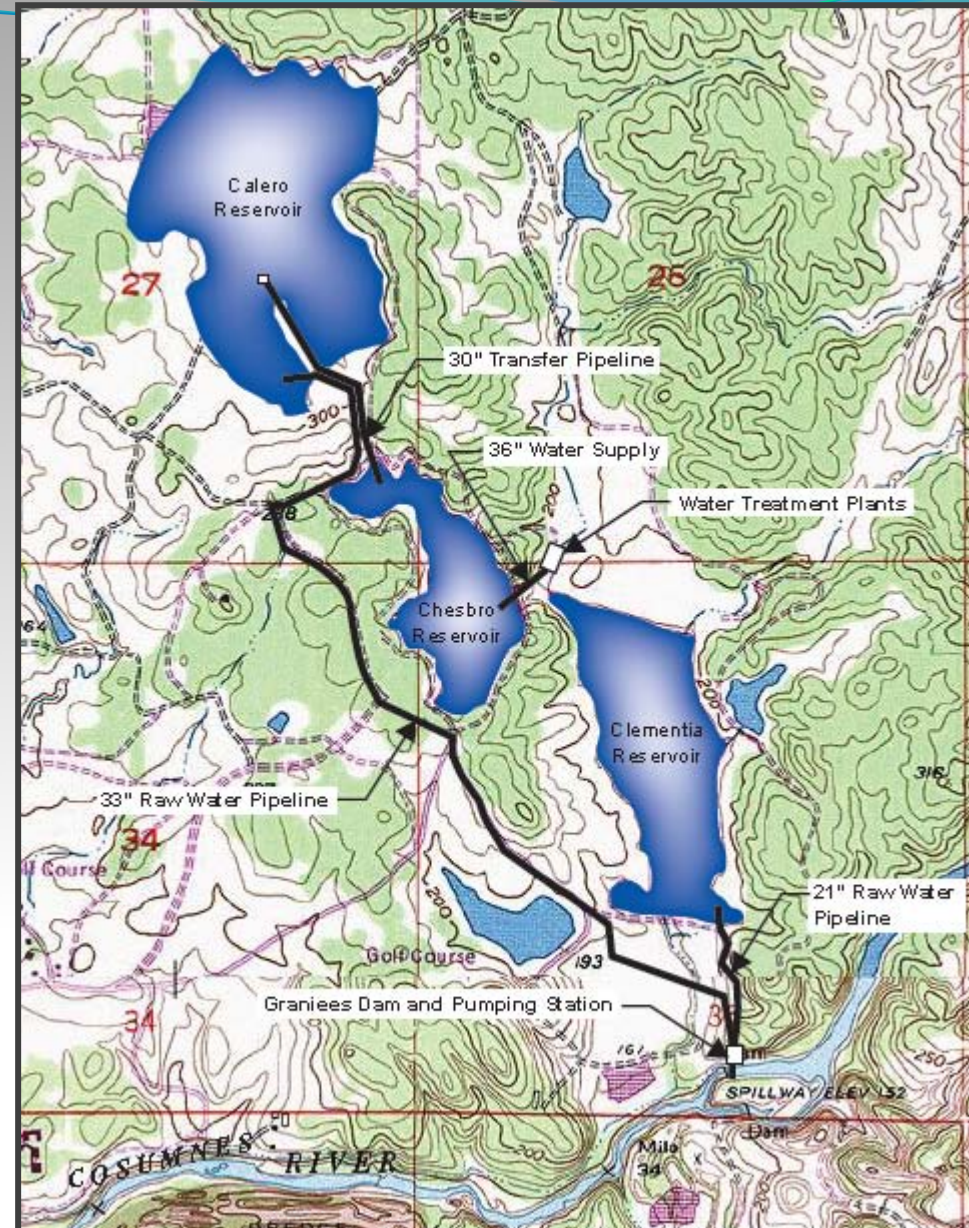
- 2011-2012 Pumping Season : 2,550 Ac. ft. (830.9 MG) pumped
Started filling on January 21, 2012.
Lowest total storage volume measured on January 18, 2012 at 3,252 Ac. ft.
- 2012-2013 Pumping Season : 2,208.2 Ac. ft. (719.5 MG) pumped
Started filling on December 8, 2012.
Lowest total storage volume measured on November 28, 2012 at 3,307 Ac. ft.
- **2013-2014 Pumping Season:** 1,817 Ac. ft. (592.1 MG) pumped so far this
SEASON (as of March 15, 2013)
Started filling on February 9, 2014.
Lowest total storage volume measured on January 29, 2013 at 2,844.7 Ac. ft.

The District may pump water from the Cosumnes River from November 1 thru May 31 of each year for raw water storage. Amounts and times vary depending on river flow. River diversion through the Cosumnes Irrigation Association (CIA) ditch is utilized to convey water for downstream uses.

Annual amounts pumped from river to storage, including so far this year.



Raw Water supply from Granlees Dam to reservoirs and WTP



Water Production

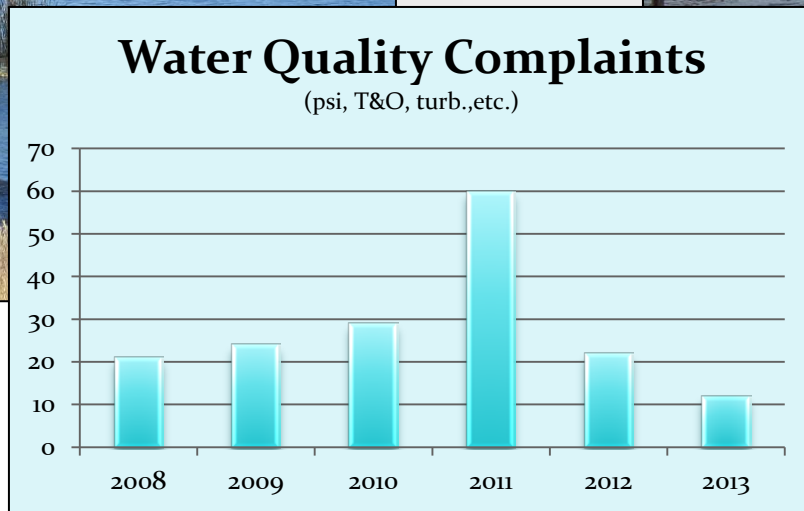
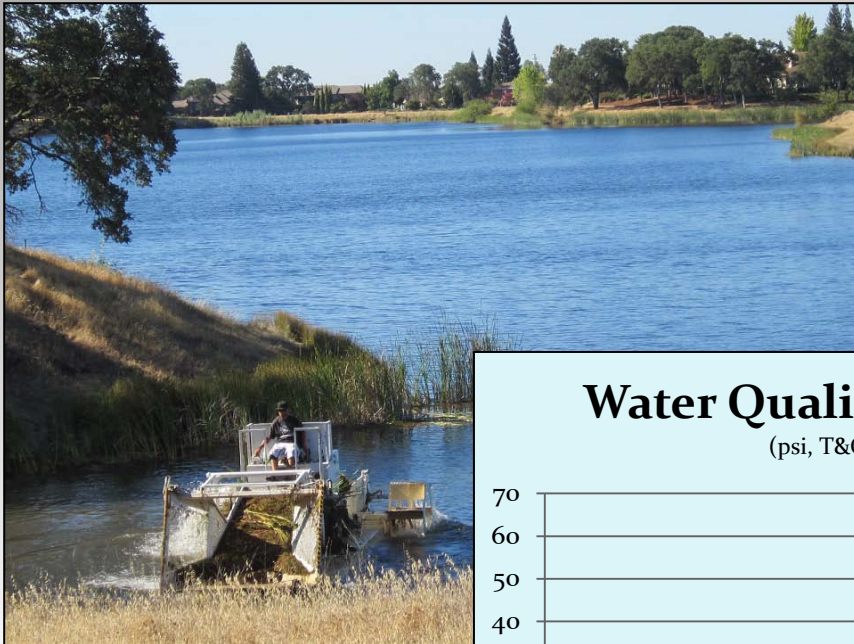
587.21 MG (1,802.2 Ac. ft.) of potable water was produced in 2013

Yearly Totals in Millions of Gallons

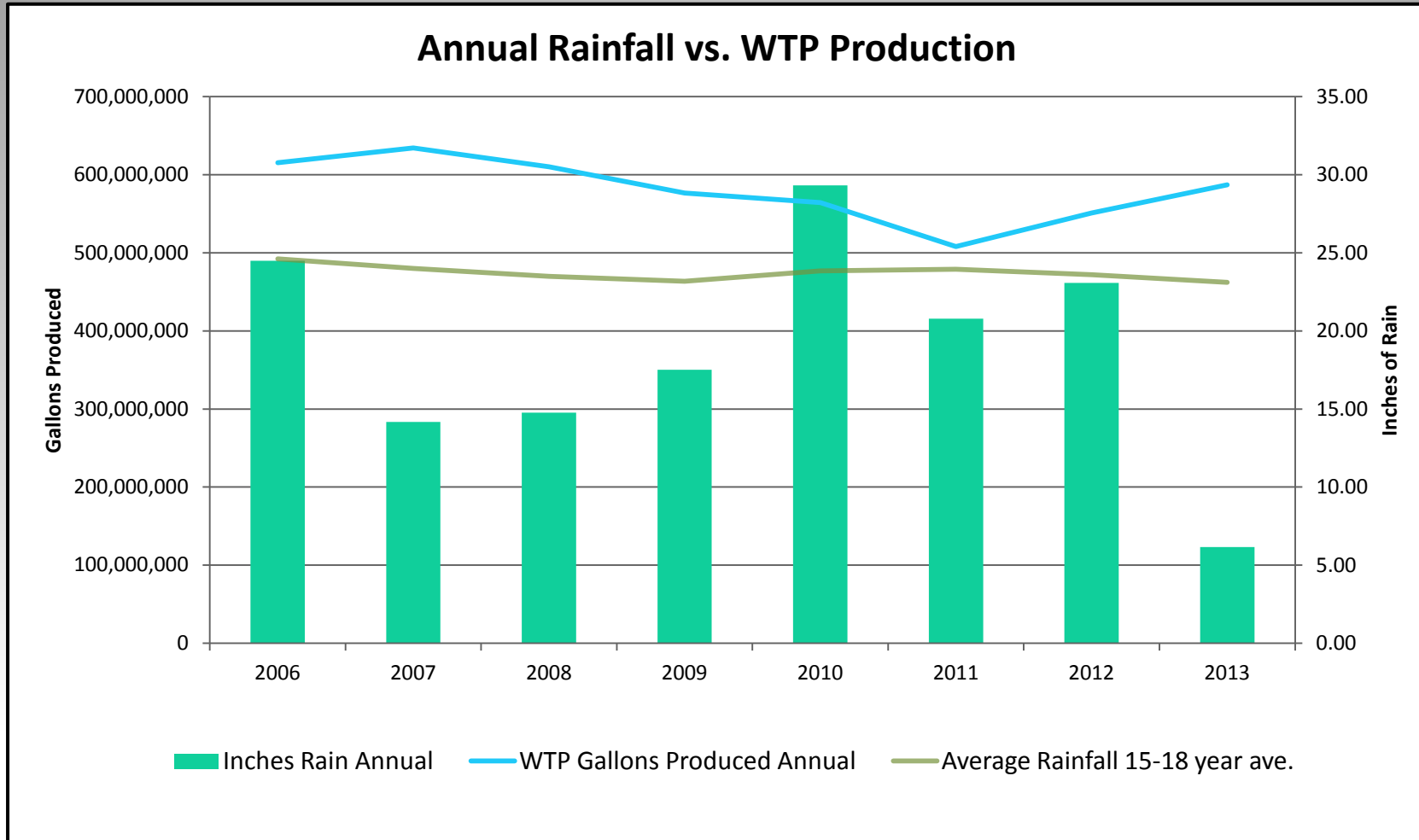
Year	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.	Total MG	Ac.ft.
2009	23.018	18.062	26.488	43.761	55.681	66.002	82.899	79.540	69.809	45.589	33.757	31.893	576.499	1769
2010	29.577	21.172	24.259	30.448	41.214	63.425	78.839	88.032	80.959	57.975	29.389	19.197	564.486	1732.5
2011	13.747	12.940	16.614	31.897	50.879	54.096	73.512	76.750	71.188	50.277	31.516	29.642	513.058	1575
2012	27.105	23.894	24.565	28.111	55.631	69.697	78.050	80.757	68.669	51.197	24.799	18.705	555.135	1691.5
2013	19.17	19.73	32.74	41.27	61.93	68.63	80.71	76.74	63.82	55.10	38.54	28.81	587.21	1802.2

Water Source of Supply

As part of the District's Taste and Odor Control Program, aquatic vegetation harvesting and algaecide treatments took place again in Chesbro.



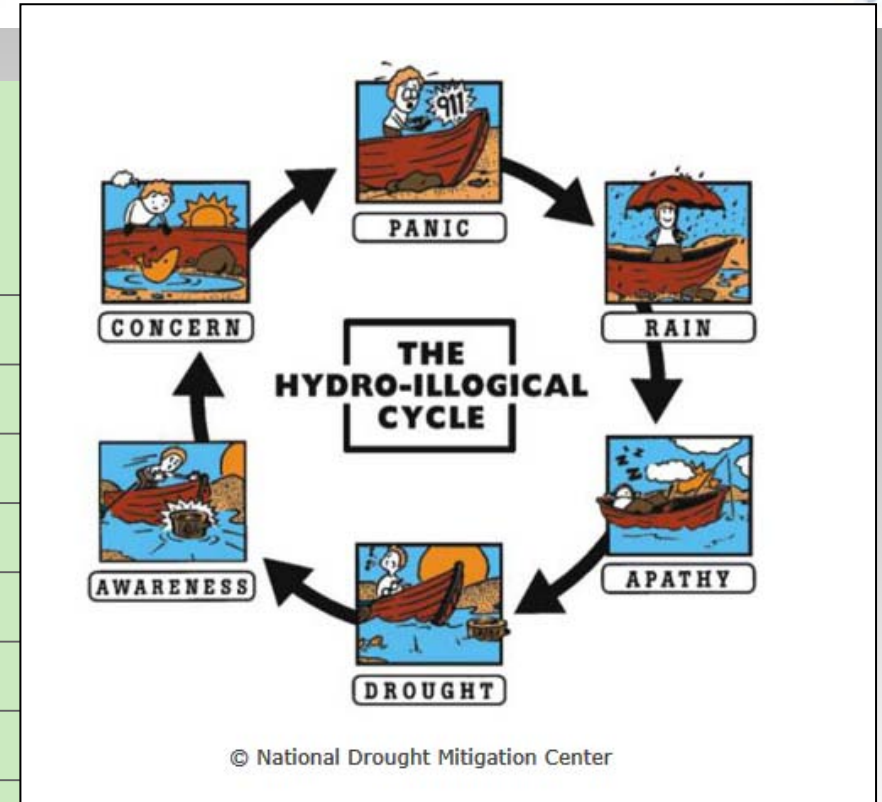
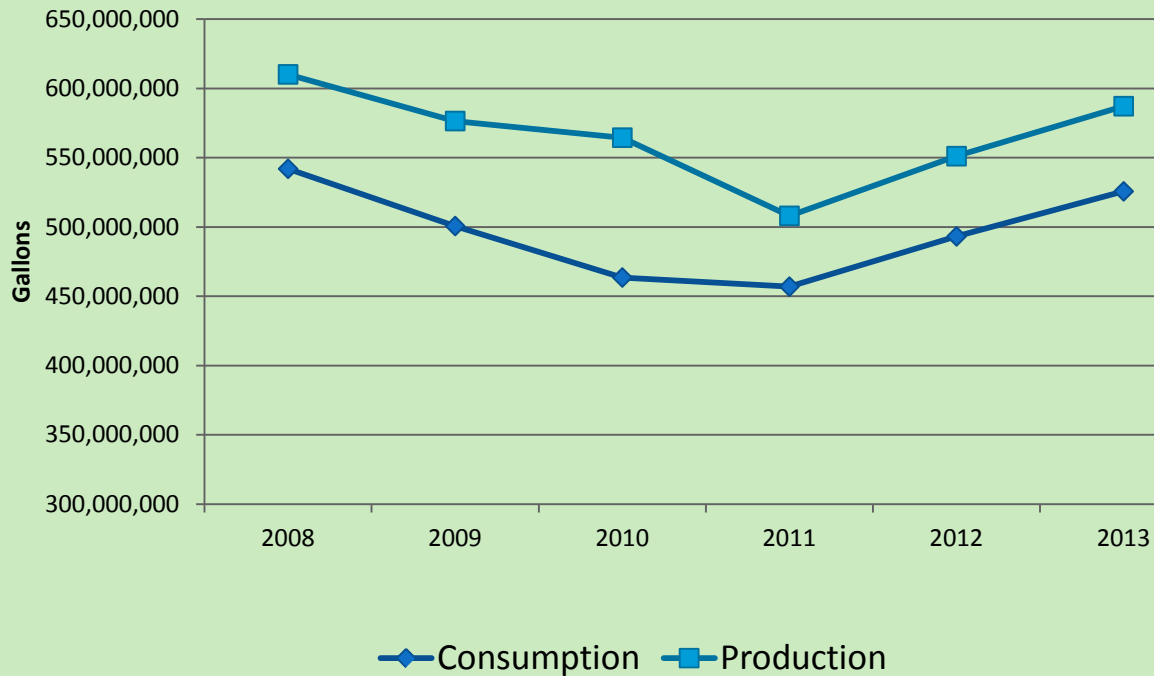
Water Usage





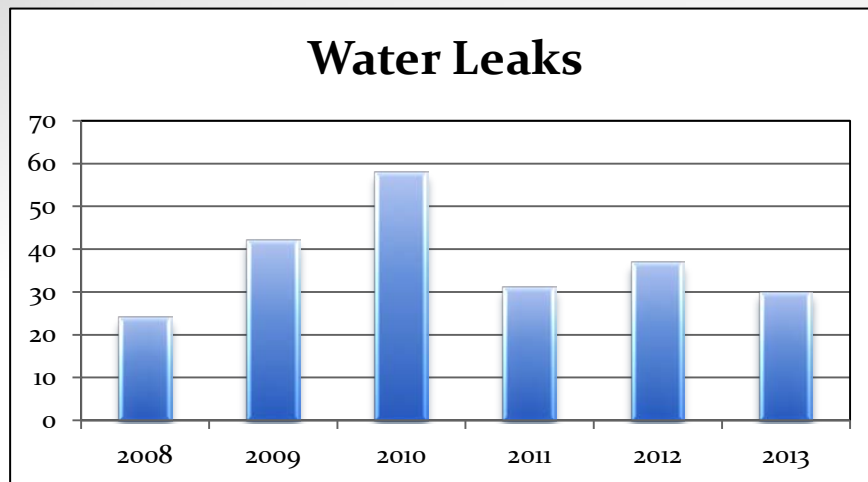
WATER CONSERVATION

WTP Production & Consumer Consumption



Water Distribution Maintenance

- 30 Water Leak Repairs
- 14 Air Release Valves Replaced
- Completed an inspection report of all North water system end of line blowoffs; repaired 2 of them.
- Replaced 3 firehydrants





**Water Quality
information
available on our
District Website**



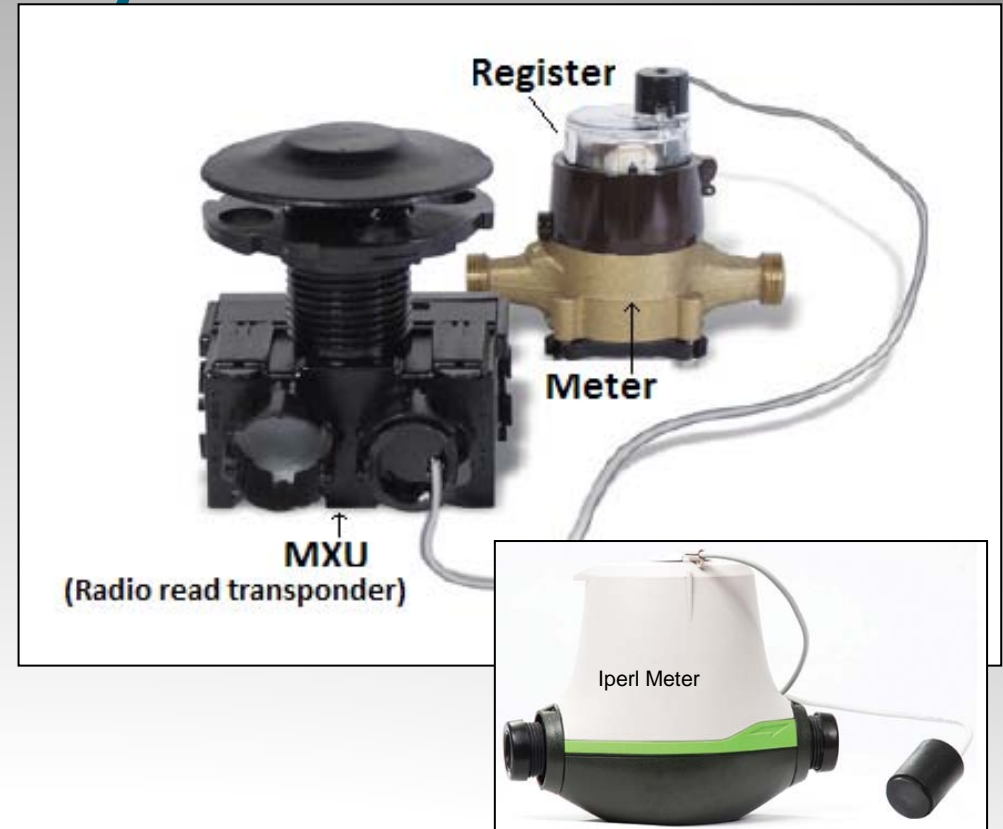
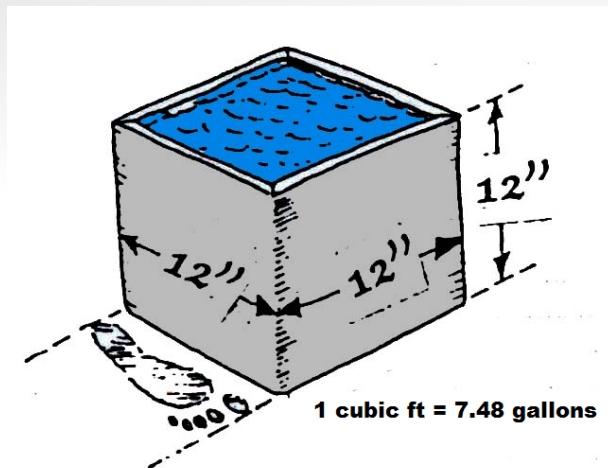
General Mineral Analysis 2013

ND = None Detected mg/L = Milligrams per liter MCL = Maximum Contaminant Level

MCL	REPORTING UNITS	CHEMICAL	ANALYSES RESULTS
-	mg/L = ppm	Hardness, (Total) as CaCO ₃	38
-	mg/L	Calcium (Ca)	7.6
-	mg/L	Magnesium (Mg)	4.6
-	mg/L	Sodium (Na)	5.2
-	mg/L	Potassium (K)	1.1
-	mg/L	Alkalinity, (Total) (as CaCO ₃ equivalents)	51
-	mg/L	Hydroxide (as OH)	ND
-	mg/L	Carbonate (as CO ₃)	ND
-	mg/L	Bicarbonate (as CaCO ₃)	51
*	mg/L +	Sulfate (SO ₄)	2.8
*	mg/L +	Chloride	2.7
45	mg/L	Nitrate (NO ₃)	ND
2.0	mg/L	Fluoride (F) (Natural-Source)	ND
	Std Units +	pH, Laboratory	7.26
**	umhos +	Specific Conductance (E.C.)	120
***	mg/L +	Total Filterable Dissolved Residue @ 180 C (TDS)	53
15	UNITS	Color, Apparent (Unfiltered)	ND
3	TON	Odor Threshold @ 60 C	ND
0.5	mg/L +	MBAS	ND
1000	ug/L = ppb	Aluminum (Al)	ND
6	ug/L	Antimony	ND
10	ug/L	Arsenic (As)	ND
1000	ug/L	Barium (Ba)	ND
4	ug/L	Beryllium	ND
5	ug/L	Cadmium (Cd)	ND
50	ug/L	Chromium (Total Cr)	ND
1000	ug/L +	Copper (Cu)	ND
300	ug/L +	Iron (Fe)	ND
	ug/L	Lead (Pb)	ND
50	ug/L +	Manganese (Mn)	ND
2	ug/L	Mercury (Hg)	ND
100	ug/L	Nickel	ND
50	ug/L	Selenium (Se)	ND
100	ug/L +	Silver (Ag)	ND
2	ug/L	Thallium	ND
5000	ug/L	Zinc (Zn)	ND

2013 Distribution System Meter repairs.

- Total MXU's Replaced- 36
- Total Meters Replaced- 157
- Total Registers Replaced- 16

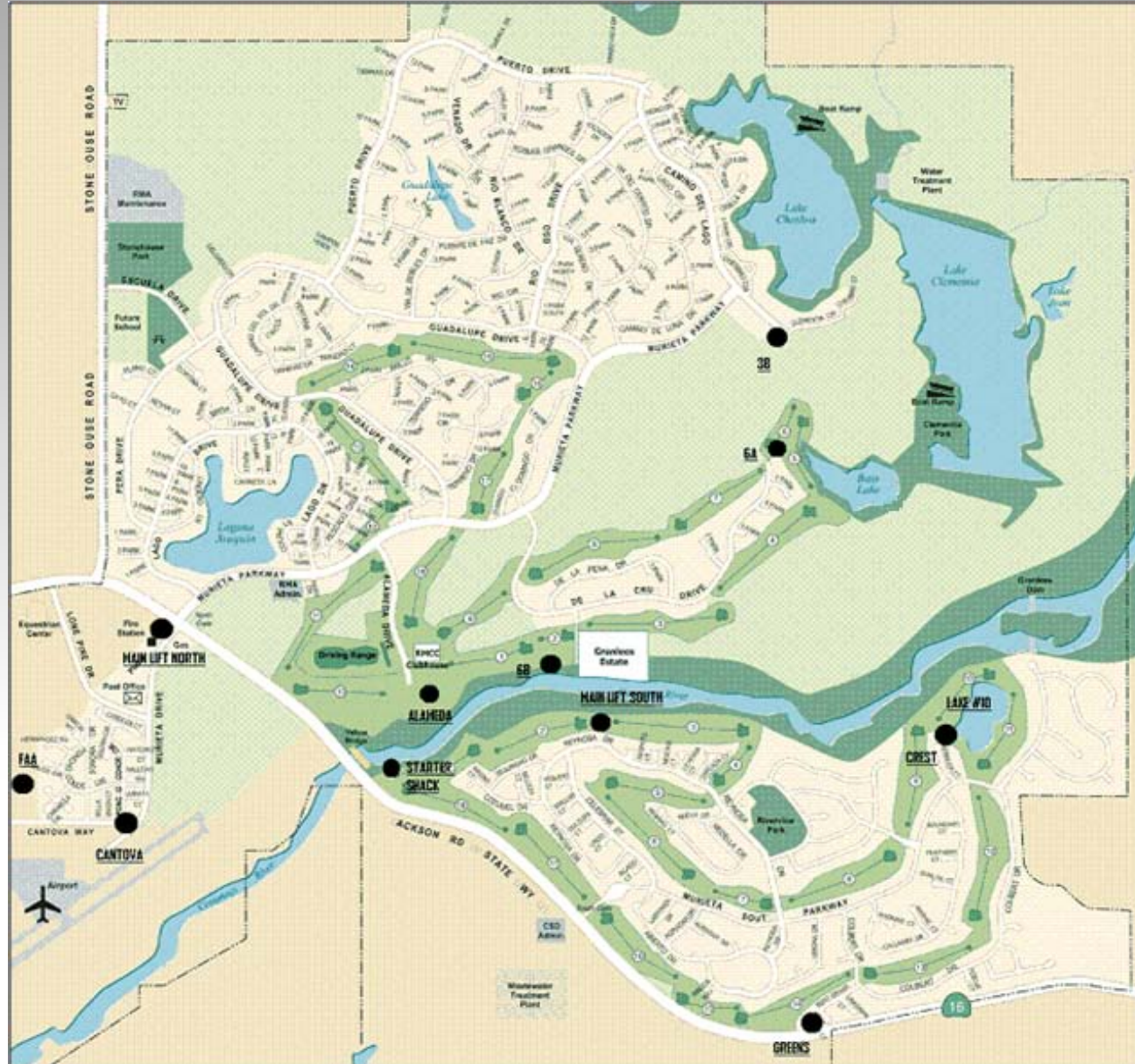


Meters are used to bill customers based on their water use at \$0.0152 per cubic foot, helping to encourage water conservation.

Sewer Collection System

11 Sewer Pumping Stations

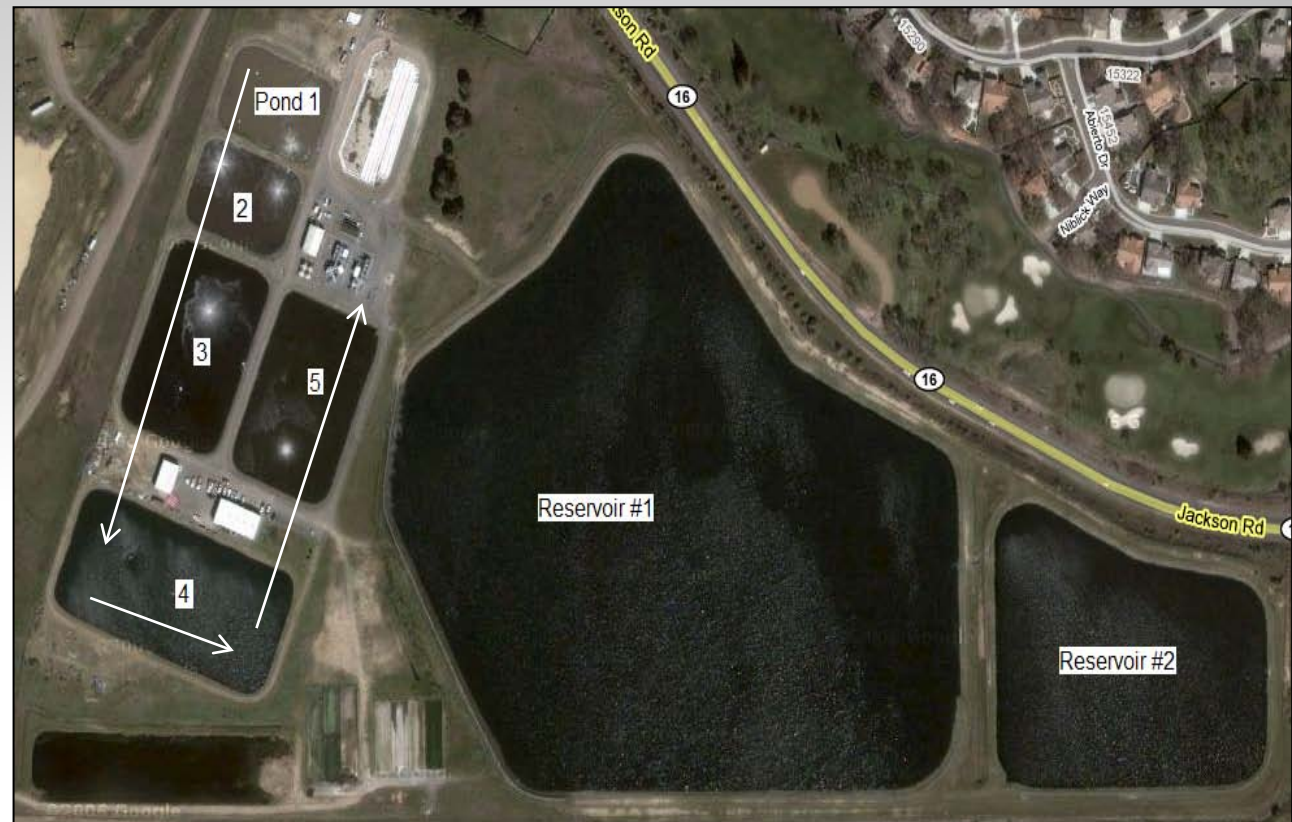
- Main Lift North
- Cantova
- FAA
- 3B
- Alameda
- Starter Shack
- 6B
- 6A
- Main Lift South
- Crest
- Greens



Wastewater Treatment System Overview

- 2013 influent flow received was **146.45 MG** (449.5 acre-feet), vs 159.2 MG (488.6 acre-feet) in 2012.
- Treated wastewater is stored in two reservoirs until needed for reclamation use by RMCC during summer months.

• Stored secondary treated wastewater is pumped through a DAF system and then filtered, disinfected with chlorine, becoming tertiary treated water, and supplied to the golf courses for irrigation.



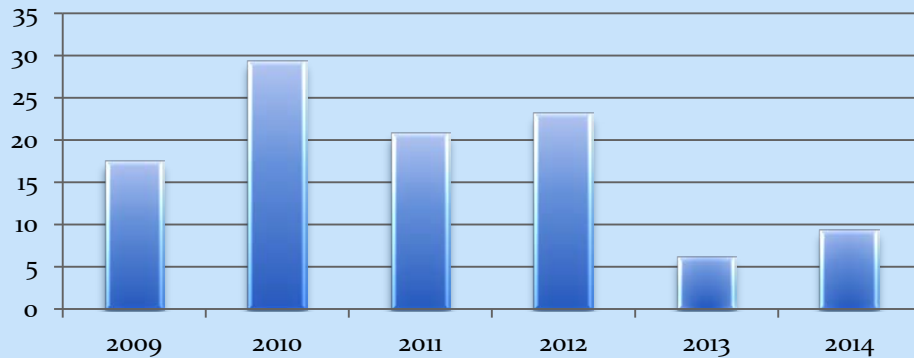
To course

141.83 MG
(435.3 Acre-feet)
of tertiary water
was delivered in
2013 for RMCC
irrigation use.

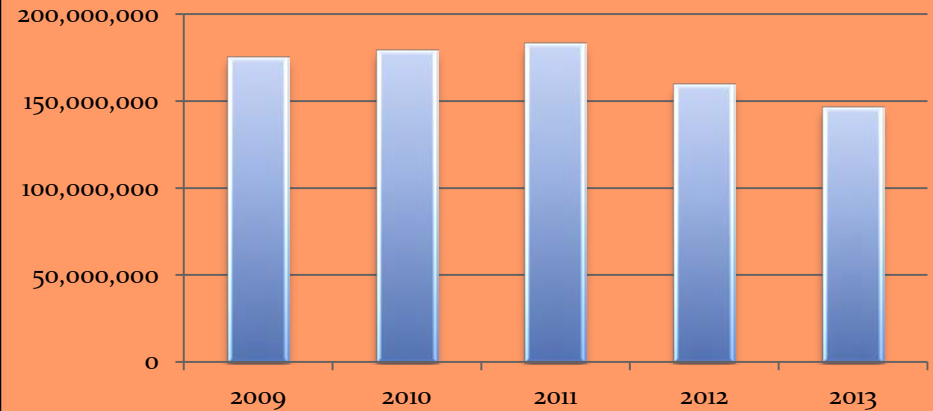


Sewer Metrics

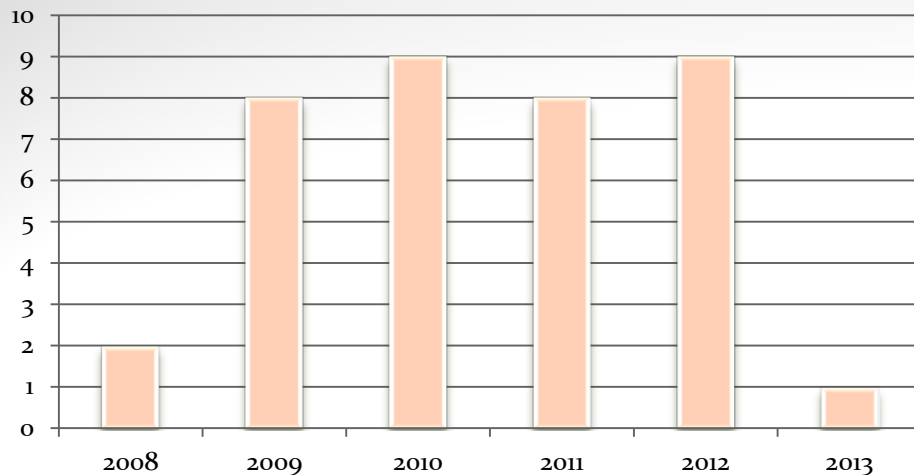
INCHES OF RAINFALL MEASURED AT WASTEWATER PLANT



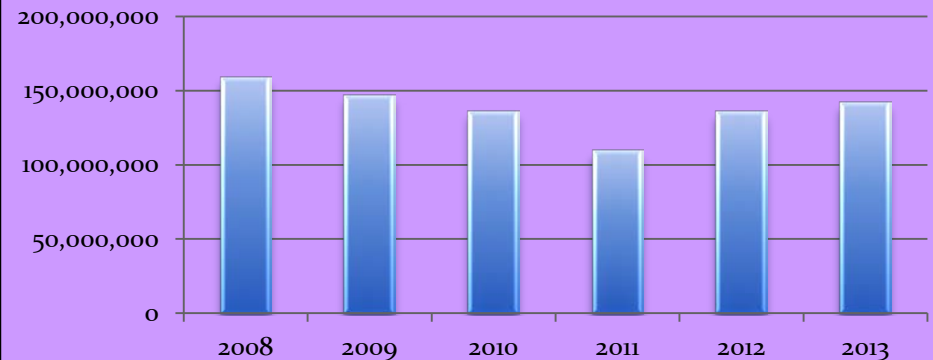
Total Wastewater Returned to Plant From Customers



Sewer Blockages



TREATED RECLAIMED WASTEWATER DELIVERED FOR GOLF COURSE IRRIGATION

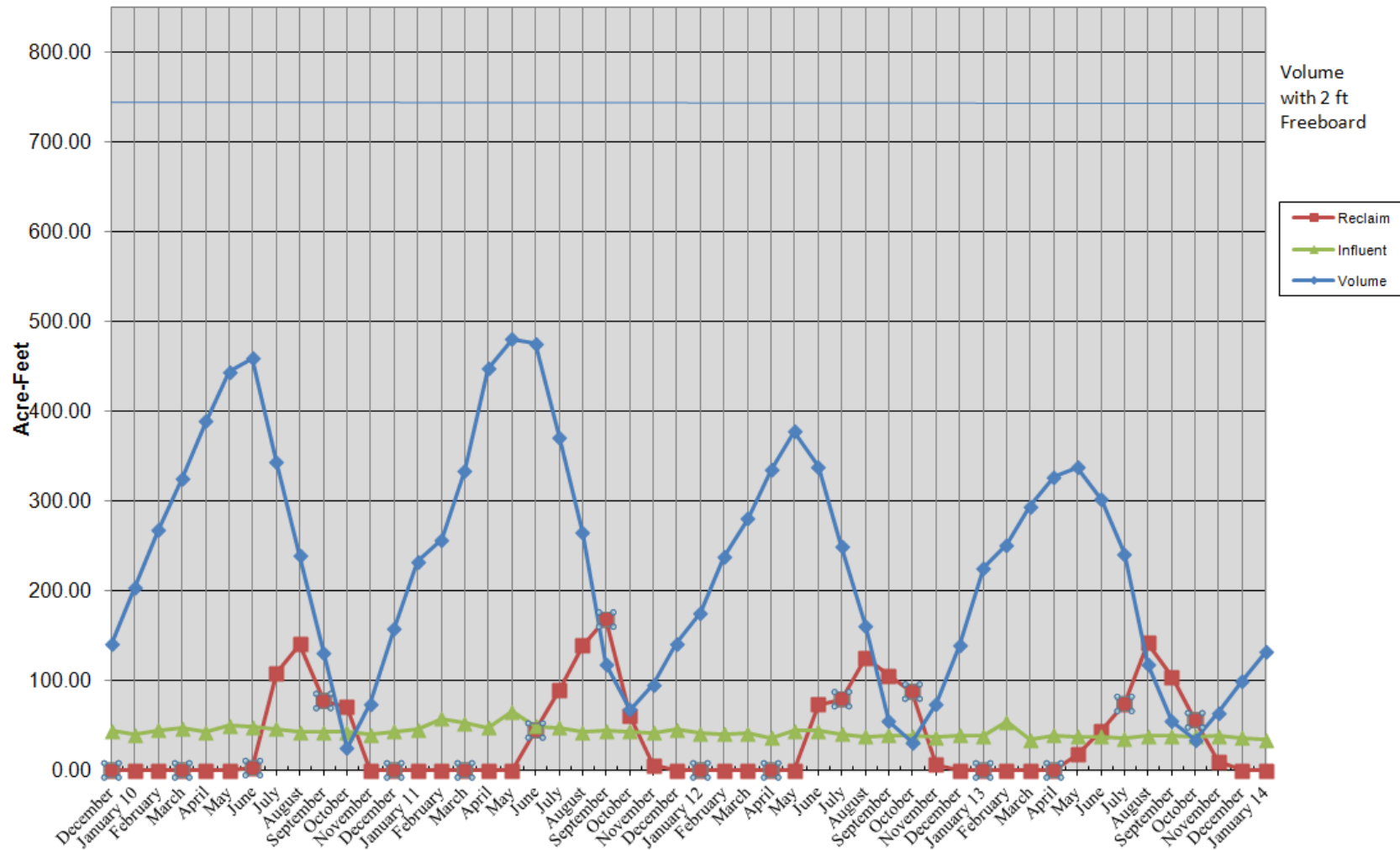


WASTEWATER RECLAMATION PLANT PERFORMANCE

- To comply with Title 22 requirements, the plant produced effluent with a turbidity that did not exceed 1.0 NTU for any 24-hour period throughout the year, averaging 0.27 NTU per day.
 - This *exceeds* the turbidity requirements of drinking water.
- Tertiary effluent was again produced with no coliform violations (bacterial monitoring) and an average pH of 6.8.
- Biochemical Oxygen Demand (BOD) removal was in the order of 96%, with influent BOD averaging 200.3 mg/L and secondary effluent BOD averaging 6.7 mg/L.

We effectively lowered our secondary wastewater storage to 32.8 acre-feet in 2013. The highest storage volume for the year was 341 acre-feet.

Volume of Secondary Wastewater in Reservoirs 2010-2014



Drainage

Staff maintains over 13 miles of open and piped drainage within the District and Midge Fly control in Laguna Joaquin.



Some of the 2013 Projects Completed

- Sewer:

- Hauled away 191 tons of dried biosolids from facility
- Removed 113,400 gallons of settled sludge from process Ponds
- Completed Title 16 Feasibility Study, Title 22 Engineering Report, and Report of Waste Discharge Report in regards to obtaining a Master Reclamation Permit for future use of recycled water throughout the District
- Rehabilitation of Main Lift North sewer pumping station wet wells and two manholes leading up to station
- Repair of sewer main between Lindero Drive and Laguna Joaquin basin
- Replaced three 18" valves at wastewater secondary treatment ponds
- Replaced odor control media for odor control unit (Peacekeeper) at Main Lift North sewer pumping station to vent wet well gases to help prevent corrosion of interior structures.

- Water :

- Completed Plans & Specifications for the rehabilitation of Plant #1 and put project out to bid
- Completed augmentation well site investigations and borehole geology for plans and specifications for bidding & well development
- Raised the Chesbro Siphon vault to be able to capture full two feet of stoplog volume in Chesbro reservoir
- Ran new power lines for Calero East Dam and Clementia Dam subdrains
- Replaced chemical feed lines at Water Plant
- Cleaned out Water Plant #1 & #2 sedimentation basins
- Replaced sand and valve in solids drying beds

- Drainage:

- Obtained pipe for replacement of drainage culvert across hole #13 on the north course in summer of 2014
- Redefined various drainage ditches throughout the community to ensure proper channeling of stormwater flows

Some of the Projects completed in 2013

Well site investigations



Valve replacement



Raised low manhole lids



Sewer Repairs

Raised Chesbro Siphon Vault



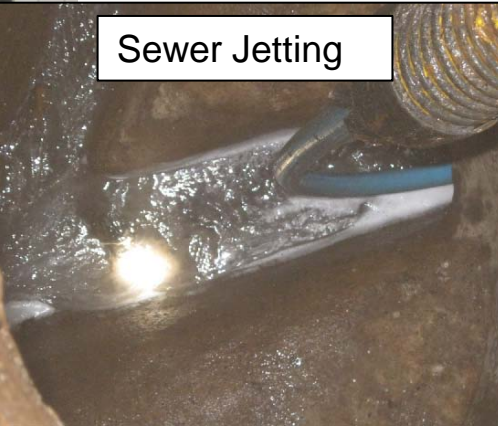
Granlees North Dam Repair



Replaced Dry Rot on Plant #2



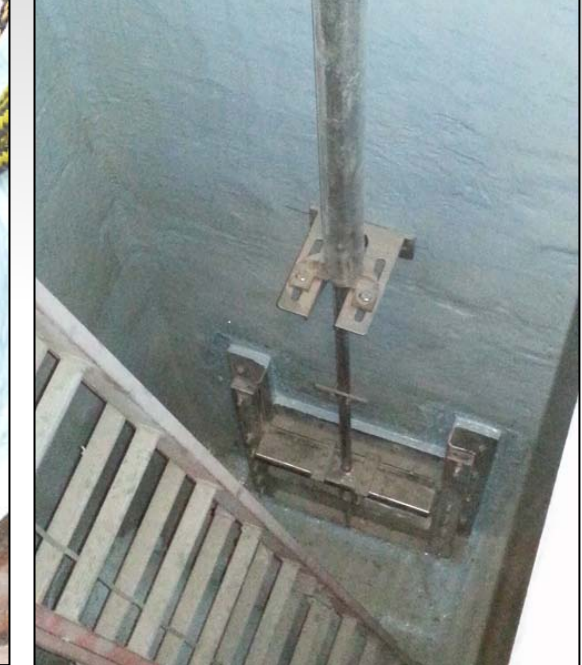
Sewer Jetting



Calero East Dam Subdrain



Main Lift North rehab



Thank You

With the continued support of the Board, we will continue to make improvements and keep the District running with a high standard of service and operation.